

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Serial No.:** 10/814,909  
**Inventors:** HODDIE, J. Peter *et al.*  
**Filed:** March 30, 2004  
**Title:** INTERFACE NEGOTIATION

**Art Unit:** 2618  
**Examiner:** WENDELL, Andrew  
**Confirmation No.:** 2889  
**Docket No.:** 113748-4996US

**APPEAL BRIEF (37 C.F.R. § 41.37)**

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Alexandria, VA 22313-1450

Dear Sir:

This is an Appeal from the rejection of claims 1, 2, 4, 5, 7, 8, 10-15, 17-20 and 22-38 in the Final Office Action of June 13, 2008, relating to the above-referenced application.

(i) **Real Parties in Interest**

Sony Corporation and Sony Pictures Entertainment Inc, assignees of the present application, are the real parties in interest.

(ii) **Related Appeals and Interferences**

There are no related appeals and/or interferences currently pending.

(iii) **Status of Claims**

Claims 1, 2, 4, 5, 7, 8, 10-15, 17-20 and 22-38 are pending in the case. Claims 1, 2, 4, 5, 7, 8, 10-15, 17-20 and 22-38 have been rejected. Claims 1, 2, 4, 5, 7, 8, 10-15, 17-20 and 22-38 are appealed herein.

The present application was filed on March 30, 2004 with claims 1-33. In an amendment dated April 28, 2006, claims 1, 19, 29 and 33 were amended. In an amendment dated July 31, 2006, claims 1, 19, 29 and 33 were further amended. In an amendment dated March 20, 2007, claims 3, 9 and 21 were cancelled and claims 1, 4, 5, 7, 8, 19, 29 and 33 were further amended. In an amendment dated September 7, 2007, claim 16 was canceled and claims 1, 5, 7-8, 12-13, 19, 22, 24, 29 and 33 were further amended. In an amendment dated March 17, 2007, claims 34-38 were added and claims 1, 2, 4, 19, 29 and 33 were further amended. In an amendment dated September 15, 2008, claims 1, 19, 29 and 33 were further amended. No further claim amendments have been made.

(iv) **Status of Amendments**

No amendments have been filed subsequent to the amendment dated September 15, 2008.

(v) **Summary of Claimed Subject Matter**

A. Claim 1 -

A wireless device, comprising:

- a) a wireless interface configured to provide short range and low power interface for supporting communication across a wireless connection used for a negotiation service to select a communication interface, (*Publication, Paragraphs [0014]-[0016], Figures 1 and 2*)
- b) wherein the short range and low power interface provides reliable signal and reduced power consumption for negotiation; (*Publication, Paragraphs [0014]-[0016], Figures 1 and 2*)
- c) a first communication interface for providing a medium range wireless interface; (*Publication, Paragraphs [0014]-[0016], Figures 1 and 2*)
- d) a second communication interface for providing a wired interface; and (*Publication, Paragraphs [0014]-[0016], Figures 1 and 2*)
- e) a controller connected to said wireless interface, said controller supporting the negotiation service and a communication service; (*Publication, Paragraph [0017], Figure 2*)
- f) wherein said negotiation service provides interface negotiation for using said wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device, (*Publication, Paragraphs [0019]-[0021], Figure 3*)
- g) wherein said negotiation service selects one of: (1) said first communication interface for direct communication between the wireless device and said another device, and (2) said second communication interface for indirect communication through a network, (*Publication, Paragraphs [0015], [0031]*)
- h) wherein said first communication interface is a separate interface from said wireless interface used for interface negotiation, (*Publication, Paragraphs [0016]-[0017]*)
- i) wherein said communication service provides control and management of communication with said another device across a connection established using said negotiation service, and (*Publication, Paragraph [0017], Figure 2*)

j) wherein a first connection opened using said negotiation service and said wireless interface is kept open while a second connection opened using said communication service and one of said first communication interface and said second communication interface is open so that said first connection is used to adjust the operation of said second connection.  
*(Publication, Paragraph [0024])*

B. Claim 2 -

The wireless device of claim 1, wherein:

a) said wireless interface supports Bluetooth. *(Publication, Paragraphs [0011]-[0013])*

C. Claim 4 -

The wireless device of claim 1, wherein:

a) said first communication interface supports Wi-Fi. *(Publication, Paragraphs [0011]-[0013])*

D. Claim 5 -

The wireless device of claim 1, wherein:

a) each of said wireless interface and said appropriate communication interface support respective types of wireless communication. *(Publication, Paragraphs [0011]-[0013])*

E. Claim 7 -

The wireless device of claim 1, wherein:

a) said appropriate communication interface provides a higher data rate than said wireless interface. *(Publication, Paragraph [0030])*

F. Claim 8 -

The wireless device of claim 1, wherein:

a) said appropriate communication interface uses more power than said wireless interface. (*Publication, Paragraph [0030]*)

G. Claim 10 -

The wireless device of claim 1, wherein:

a) said negotiation service provides interface negotiation automatically. (*Publication, Paragraph [0026], Figures 3 and 4*)

H. Claim 11 -

The wireless device of claim 10, wherein:

a) said negotiation service provides interface negotiation in response to a request by a user. (*Publication, Paragraph [0020]*)

I. Claim 12 -

The wireless device of claim 10, wherein:

a) said negotiation service selects said appropriate communication interface without user input. (*Publication, Paragraph [0026], Figures 3 and 4*)

J. Claim 13 -

The wireless device of claim 10, wherein:

a) said negotiation service selects said appropriate communication interface using settings previously provided by a user. (*Publication, Paragraph [0026]*)

K. Claim 14 -

The wireless device of claim 1, wherein:

- a) said wireless interface supports a direct connection to said another device.  
(*Publication, Paragraphs [0015], [0031]*)

L. Claim 15 -

The wireless device of claim 14, wherein:

- a) said direct connection is a newly established ad hoc network established with said another device. (*Publication, Paragraphs [0011], [0031]*)

M. Claim 17 -

The wireless device of claim 1, wherein:

- a) said wireless interface supports receiving a beacon signal from a beacon source, and (*Publication, Figures 3 and 5*)
- b) said negotiation service uses said beacon signal to open communication.  
(*Publication, Paragraphs [0020], [0032]-[0036]*)

N. Claim 18 -

The wireless device of claim 17, wherein:

- a) said beacon signal indicates said another device as a target device and a target interface, and (*Publication, Figures 3 and 5*)
- b) said another device is different from said beacon source. (*Publication, Paragraphs [0020], [0032]-[0036]*)

O. Claim 19 -

A method of interface negotiation, comprising:

- a) configuring a default wireless interface as short range and low-power interface; *(Publication, Paragraphs [0014]-[0016], Figures 1 and 2)*
- b) searching for a second device using the default wireless interface of a first device; *(Publication, Paragraphs [0011], [0020])*
- c) establishing a negotiation connection between said first device and said second device using said default wireless interface; *(Publication, Paragraphs [0020]-[0021], Figure 3)*
- d) wherein the short range and low power interface provides reliable signal and reduced power consumption for the negotiation connection; *(Publication, Paragraphs [0014]-[0016])*
- e) negotiating to select an appropriate communication interface for communicating data between said first device and said second device using said negotiation connection, and to investigate information and capabilities of said second device; *(Publication, Paragraphs [0019]-[0021], Figure 3)*
- f) wherein selecting an appropriate communication interface includes selecting one of:
  - g) (1) a first communication interface for direct connection between the first device and the second device, and (2) a second communication interface for indirect connection through a network; *(Publication, Paragraphs [0015], [0031])*
  - h) wherein said communication interface is a separate interface from said default wireless interface used for providing negotiation connection; *(Publication, Paragraphs [0016]-[0017])*

i) establishing a communication connection using said selected communication interface; (*Publication, Paragraph [0023]*)

j) communicating data between said first device and said second device using said communication connection, (*Publication, Paragraph [0024]*)

k) wherein said negotiation connection is open while said communication connection is open so that said negotiation connection is used to adjust the operation of said communication connection, and information on said negotiation connection is used to determine when to close the communication connection; and (*Publication, Paragraph [0024]*)

l) closing said communication connection when the determination is made. (*Publication, Paragraph [0025]*)

P. Claim 20 -

The method of claim 19, further comprising:

a) searching for said second device using a secondary interface. (*Publication, Paragraph [0020]*)

Q. Claim 22 -

The method of claim 19, wherein negotiating to select an appropriate communication interface includes:

a) determining one or more available interfaces; (*Publication, Paragraph [0028], Figure 4*)

b) determining one or more compatible interfaces from among said one or more available interfaces; and (*Publication, Paragraph [0029], Figure 4*)

c) selecting one of said one or more compatible interfaces as said communication interface using one or more communication criteria. (*Publication, Paragraph [0030], Figure 4*)



R. Claim 23 -

The method of claim 22, wherein:

a) said communication criteria include data rate and power use. (*Publication, Paragraph [0030]*)

S. Claim 24 -

The method of claim 22, wherein negotiating to select an appropriate communication interface also includes:

a) selecting a communication mode. (*Publication, Paragraph [0031], Figure 4*)

T. Claim 25 -

The method of claim 24, wherein:

a) said communication mode indicates whether to use a direct connection between said first device and said second device or an indirect connection between said first device and said second device for said communication connection. (*Publication, Paragraph [0031]*)

U. Claim 26 -

The method of claim 24, wherein:

a) said communication mode indicates a type of encryption to use for said communication connection. (*Publication, Paragraph [0031], Figure 4*)

V. Claim 27 -

The method of claim 19, further comprising:

a) receiving a beacon signal from a beacon source at said first device; and  
(*Publication, Paragraph [0035], Figure 5*)

- b) determining a target device and a target interface using said beacon signal;  
*(Publication, Paragraph [0035], Figure 5)*
- c) wherein said target device is said second device and said target interface is said default interface. *(Publication, Paragraph [0033], Figure 5)*

W. Claim 28 -

The method of claim 27, wherein:

- a) said target device is different from said beacon source. *(Publication, Paragraph [0034])*

X. Claim 29 -

A system for interface negotiation, comprising:

- a) means for configuring a default wireless interface as short range and low-power interface; *(Publication, Paragraphs [0014]-[0016], Figures 1 and 2)*
- b) means for searching for a second device using the default wireless interface of a first device; *(Publication, Paragraphs [0011, [0020])*
- c) means for establishing a negotiation connection between said first device and said second device using said default wireless interface, *(Publication, Paragraphs [0020]-[0021], Figure 3)*
- d) wherein the short range and low power interface provides reliable signal and reduced power consumption for the negotiation connection; *(Publication, Paragraphs [0014]-[0016])*
- e) means for negotiating to select an appropriate communication interface for communicating data between said first device and said second device using said negotiation

connection, and to investigate information and capabilities of said second device, (*Publication, Paragraphs [0019]-[0021], Figure 3*)

f) wherein selecting an appropriate communication interface includes selecting one of:

g) (1) a first communication interface for direct connection between the first device and the second device, and (2) a second communication interface for indirect connection through a network, (*Publication, Paragraphs [0015], [0031]*)

h) wherein said communication interface is a separate interface from said default wireless interface used for providing negotiation connection; (*Publication, Paragraphs [0016]-[0017]*)

i) means for establishing a communication connection using said selected communication interface; (*Publication, Paragraph [0023]*)

j) means for communicating data between said first device and said second device using said communication connection, (*Publication, Paragraph [0024]*)

k) wherein said negotiation connection is open while said communication connection is open so that said negotiation connection is used to adjust the operation of said communication connection, and information on said negotiation connection is used to determine when to close said communication connection; and (*Publication, Paragraph [0024]*)

l) means for closing said communication connection when the determination is made. (*Publication, Paragraph [0025]*)

Y. Claim 30 -

The system of claim 29, further comprising:

a) means for determining one or more available interfaces; (*Publication, Paragraph [0028], Figure 4*)

b) means for determining one or more compatible interfaces from among said one or more available interfaces; and (*Publication, Paragraph [0029], Figure 4*)

c) means for selecting one of said one or more compatible interfaces as said communication interface using one or more communication criteria. (*Publication, Paragraph [0030], Figure 4*)

Z. Claim 31 -

The system of claim 30, further comprising:

a) means for selecting a communication mode. (*Publication, Paragraph [0031], Figure 4*)

AA. Claim 32 -

The system of claim 29, further comprising:

a) means for receiving a beacon signal from a beacon source at said first device; and (*Publication, Paragraph [0035], Figure 5*)

b) means for determining a target device and a target interface using said beacon signal; (*Publication, Paragraph [0035], Figure 5*)

c) wherein said target device is said second device and said target interface is said default interface. (*Publication, Paragraph [0033], Figure 5*)

BB. Claim 33 -

A computer-readable storage medium including a computer program for use in interface negotiation, the program comprising executable instructions that cause a computer to: (*Publication, Paragraphs [0037]-[0038]*)

a) configure a default wireless interface as short range and low-power interface; (*Publication, Paragraphs [0014]-[0016], Figures 1 and 2*)

- b) search for a second device using the default wireless interface of a first device; *(Publication, Paragraphs [0011], [0020])*
- c) establish a negotiation connection between said first device and said second device using said default wireless interface; *(Publication, Paragraphs [0020]-[0021], Figure 3)*
- d) wherein the short range and low power interface provides reliable signal and reduced power consumption for the negotiation connection; *(Publication, Paragraphs [0014]-[0016])*
- e) negotiate to select an appropriate communication interface for communicating data between said first device and said second device using said negotiation connection, and to investigate information and capabilities of said second device; *(Publication, Paragraphs [0019]-[0021], Figure 3)*
- f) wherein selecting an appropriate communication interface includes selecting one of:
  - g) (1) a first communication interface for direct connection between the first device and the second device, and (2) a second communication interface for indirect connection through a network; *(Publication, Paragraphs [0015], [0031])*
  - h) wherein said communication interface is a separate interface from said default wireless interface used for providing negotiation connection; *(Publication, Paragraphs [0016]-[0017])*
  - i) establish a communication connection using said selected communication interface; *(Publication, Paragraph [0023])*
  - j) communicate data between said first device and said second device using said communication connection; *(Publication, Paragraph [0024])*
  - k) wherein said negotiation connection is open while said communication connection is open so that said negotiation connection is used to adjust the operation of said

communication connection, and information on said negotiation connection is used to determine when to close said communication connection; and (*Publication, Paragraph [0024]*)

l) close said communication connection when the determination is made.  
(*Publication, Paragraph [0025]*)

CC. Claim 34 -

The wireless device of claim 17,

a) wherein the beacon source broadcasts the beacon signal using a short-range wireless interface, such that said wireless interface configured as short range and low-power interface can receive the beacon signal to be used in said negotiation service. (*Publication, Paragraphs [0034], [0036]*)

DD. Claim 35 -

The wireless device of claim 34,

a) wherein the beacon signal includes information indicating a resource and connection information for accessing that resource. (*Publication, Paragraph [0034]*)

EE. Claim 36 -

The wireless device of claim 35,

a) wherein the connection information includes information that indicates a target device, (*Publication, Paragraph [0034]*)

b) a target interface, and (*Publication, Paragraph [0034]*)

c) details on how to set up a connection to the target device through the target interface. (*Publication, Paragraph [0034]*)

FF. Claim 37-

The wireless device of claim 34,

a) wherein the beacon signal includes information for multiple resources or connections to indicate that a particular data file can be accessed through a connection. (*Publication, Paragraph [0034]*)

GG. Claim 38 -

The wireless device of claim 17,

a) wherein the beacon signal is supplied upon request such that when the wireless device enters the range of the beacon source, (*Publication, Paragraph [0036]*)

b) the device informs the beacon source of the device's presence, and (*Publication, Paragraph [0036]*)

c) the beacon source sends the beacon signal to the wireless device. (*Publication, Paragraph [0036]*)

**(vi) Grounds of Rejection to be Reviewed on Appeal**

- A. Whether claims 1-2, 4-6, 10-11, 16, 19-20, 22, 24, 29-31 and 33 are unpatentable over Kotzin (U.S. Patent Publication No. 2004/0204076) and Bahl *et al.* (U.S. Patent Publication No. 2004/0204071) in view of Reddy *et al.* (U.S. Patent Publication No 2004/0127214) under 35 U.S.C. §103(a).
- B. Whether claim 7 is unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, as applied to claims 1 and 3 above, and in further view of Janik (U.S. Patent Publication No. 2004/0253945) under 35 U.S.C. §103(a).

- C. Whether claim 8 is unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, as applied to claims 1 and 3 above, and in further view of Moon *et al.* (U.S. Patent Publication No. 2005/0076054) under 35 U.S.C. §103(a).
- D. Whether claims 12, 14-15, 17-18, 25, 27-28, 32 and 34-38 are unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, and in further view of Shah *et al.* (U.S. Patent Publication No. 2004/0023652) under 35 U.S.C. §103(a).
- E. Whether claim 23 is unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, and further in view of Carlton *et al.* (U.S. Patent Publication No. 2005/0141450) and in further view of Moon *et al.* under 35 U.S.C. §103(a).
- F. Whether claim 26 is unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, as applied to claims 19, 22 and 24 above, and further in view of Ahonen *et al.* (U.S. Patent Publication No. 2005/0190920) under 35 U.S.C. §103(a).

(vii) **Argument**

**A. Claims 1-2, 4-6, 10-11, 16, 19-20, 22, 24, 29-31 and 33 are patentable over Kotzin and Bahl *et al.* in view of Reddy *et al.* under 35 U.S.C. §103(a)**

In the final office action dated June 13, 2008, claims 1-2, 4-6, 10-11, 16, 19-20, 22, 24, 29-31 and 33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kotzin and Bahl *et al.*, in further view of Reddy *et al.* As explained in the Manual of Patent Examination Procedure §706.02, entitled Rejection on Prior Art, for obviousness under 35 U.S.C. §103, “to support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” As set forth in detail below, the outstanding rejections are improper because the cited references do not suggest the claimed invention either explicitly or impliedly, or the examiner did not present a convincing line of reasoning as



to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the cited references.

- I. Kotzin fails to disclose a negotiation service provides interface negotiation for using a wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device.

Regarding claim 1, it recites a wireless device including:

- (a) a wireless interface configured to provide short range and low power interface for supporting communication across a wireless connection used for a negotiation service to select a communication interface,
- (b) wherein the short range and low power interface provides reliable signal and reduced power consumption for negotiation;
- (c) a first communication interface for providing a medium range wireless interface;
- (d) a second communication interface for providing a wired interface; and
- (e) a controller connected to said wireless interface, said controller supporting the negotiation service and a communication service;
- (f) wherein said negotiation service provides interface negotiation for using said wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device,
- (g) wherein said negotiation service selects one of: (1) said first communication interface for direct communication between the wireless device and said another device, and (2) said second communication interface for indirect communication through a network,

- (h) wherein said first communication interface is a separate interface from said wireless interface used for interface negotiation,
- (i) wherein said communication service provides control and management of communication with said another device across a connection established using said negotiation service, and
- (j) wherein a first connection opened using said negotiation service and said wireless interface is kept open while a second connection opened using said communication service and one of said first communication interface and said second communication interface is open so that said first connection is used to adjust the operation of said second connection.

(Limitation designations added for easy reference)

Accordingly, claim 1 recites at least the following: (e) a controller supporting a negotiation service and a communication service; (f) wherein the negotiation service provides interface negotiation for using a wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device; (g) wherein the negotiation service selects one of: (1) said first communication interface for direct communication between the wireless device and said another device, and (2) said second communication interface for indirect communication through a network; and (j) wherein a first connection opened using the negotiation service and the wireless interface is kept open while a second connection opened using the communication service and one of the first communication interface and the second communication interface is open so that the first connection is used to adjust the operation of the second connection.

Regarding limitation (f) of claim 1, it recites that the negotiation service provides interface negotiation for using the wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device.

This limitation (*i.e.*, limitation (f)) is disclosed in at least Paragraphs [0017] and [0021] of the present publication as follows:

[0017] ... The negotiation service 235 controls the selection of interfaces for communication and the negotiation with another wireless device to determine available interfaces and agree upon an interface, as described below. ...

[0021] Having found the second device, the first device establishes a negotiation connection with the second device using the default interface, block 310. The two devices use the negotiation connection to investigate information and capabilities of the other device. The two devices can also use the negotiation connection as a control channel while other connections are opened.

The Office Action indicates that this limitation is disclosed in Kotzin, Paragraphs [0019]-[0021], which are recited as follows (emphasis added):

[0019] With reference to FIG. 2 we have described a portable subscriber device that is arranged and constructed to augment and facilitate interfacing to the device. The subscriber device includes the wireless local area transceiver 209; preferably one or more internal interfaces, such as user interface 211; and a controller 207 coupled to the internal interfaces and the wireless local area transceiver. These elements are cooperatively operable for: detecting an external device that is capable of providing an interface to the portable subscriber device; determining whether the external device is available as an interface to the portable subscriber device; and when available as an interface, establishing a wireless link between the portable subscriber device and the external device, where the link will logically and otherwise support the interface.

[0020] Detecting an external device that is capable of providing an interface to the portable subscriber device, preferably, includes performing a service discovery process and receiving, at the wireless local area transceiver 209, a response from the external device. The specifics of the discovery process and the response(s) from the external device will of course depend on the underlying technologies and protocol conventions used by the local area transceivers. Most of these technologies specify the processes, sequences, and protocols to be used for discovery procedures. These procedures and so on are available via the appropriate

standards and most of those are published on web sites. For example in the preferred form where a Bluetooth local area transceiver is used, extensive specifications are available at [www.bluetooth.com](http://www.bluetooth.com) in the developer section under specifications. Also typically the user is left to their own to determine what applications to use and the coordination of other device specific parameters and conventions.

[0021] It will be appreciated and understood that special “device profiles” can be created to facilitate the application of this invention for use with short range wireless protocols such as Bluetooth. Additional functionality can be added to the subscriber device user interface to ease the service discovery process and help guide the user to exploit a nearby device to provide the user interface enhancement. For example, the subscriber device might detect the presence of a proximal notebook computer. The subscriber device will determine or negotiates with the external device to determine if it can be used temporarily for the subscriber device’s user interface. This might be an automatic grant if, for example, the screen saver has been initiated on the notebook computer device. This screen saver activation would indicate that the notebook is available although the ability to be used as an extension or as another’s I/O device would likely additionally require permission from the notebook computer’s user. Of course if the subscriber device and notebook computer were under control of the same individual this would not likely be a problem.

However, appellants respectfully disagree with the Examiner’s representation of Kotzin as disclosing the above indicated limitations. It appears that these passages of Kotzin are merely describing that Kotzin’s “negotiation” is for the subscriber device to negotiate with the external device to determine if it can be used temporarily for the subscriber’s user interface. In Kotzin, the “negotiation” is not about which communication interface to use but whether the external device can be used for the subscriber’s user interface. Clearly, Kotzin’s “negotiation” does not involve “using the wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device as defined and claimed in limitation (f) of claim 1.

Based on the above discussions, it cannot be maintained that Kotzin discloses a negotiation service provides interface negotiation for using a wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device. Further, claims 19, 29 and 33 recite similar limitations as recited in limitation (f) of claim 1. Claims 2, 4-5, 7-8, 10-15 and 17-18 depend from claim 1; claims 20, 22-28 depend from claim 19; claims 30-32 depend from claim 29; and claims 34-38 depend from claim 33.

II. Reddy et al. fails to disclose a negotiation service selects one of: (1) a first communication interface for direct communication between a wireless device and another device, and (2) a second communication interface for indirect communication through a network.

Regarding limitation (g) of claim 1, it recites that the negotiation service selects one of: (1) said first communication interface for direct communication between the wireless device and said another device, and (2) said second communication interface for indirect communication through a network. This limitation (i.e., limitation (g)) is disclosed in at least Paragraphs [0015] and [0017] of the present publication as follows:

[0015] In the network environment 100 shown in FIG. 1, the wireless devices 105 and 110 can establish connections for direct communication using the short-range wireless interfaces 115 and 130 or the medium-range wireless interfaces 120 and 135. The wireless devices 105 and 110 can also establish connections for indirect communication through a network 140 using the medium-range wireless interface 120 of the first wireless device 105 and either the medium-range wireless interface 135 or the wired interface 125 of the second wireless device 110. As described below, the wireless devices 105 and 110 can use the short-range wireless interfaces 115 and 130 to initially establish communication and negotiate how to proceed with further communication. For example, the wireless devices 105 and 110 may agree to use a connection through the network 140, where the first wireless device 105 establishes a connection to the network

140 using the medium-range wireless interface 120 to connect to a wireless access point of the network 140 and the second wireless device 110 establishes a connection to the network 140 through the wired interface 125.

[0017] ... The negotiation service 235 controls the selection of interfaces for communication and the negotiation with another wireless device to determine available interfaces and agree upon an interface, as described below. ....

The Office Action indicates that this limitation is disclosed in Reddy *et al.*, Paragraphs [0020]-[0021] and [0042], which are recited as follows (emphasis added):

[0020] A WTRU [wireless transmit receive unit] in accordance with the invention is used for infrastructure communication in a wireless network via network base stations and for peer-to-peer communications with other such WTRUs. The WTRU has transceiver components that are configured for selective operation in an infrastructure communication mode for infrastructure communication with a network base station and in a peer-to-peer communications mode for peer to peer communications with other WTRUs. The transceiver components may include a wireless local area network (WLAN) modem for the peer-to-peer communications with other WTRUs.

[0021] The WTRU also has a transceiver controller configured to selectively control peer-to-peer mode communications with other WTRUs based on communication signals received in infrastructure communications with a network base station. Preferably, the transceiver controller is configured to control the transceiver components to switch between infrastructure communication mode and peer-to-peer communication mode based on Quality of Service criteria.

[0042] A second user 35 is illustrated operating a second WTRU 37 in the form of a cell phone with a built in Palm-type device including built-in 802.11(b) WLAN 36. The WTRU 37 can also connect with the wireless telecommunications network 27 via signals transmitted and received by antenna 39. The second user 35 may wish talk to the first user 31 or to access or copy the phone book 38 located in the first WTRU 33. Since both WTRUs 33, 37 have a WLAN modem and also a phone network interface, the users 31, 35 are able to communicate either by means of peer-to-peer communication 40 using an 802.11(b) wireless network or by

using the telecommunications network 27. Accordingly, there is a decision to be made as to which type of communication mode is to be used.

However, appellants respectfully disagree with the Examiner's representation of Reddy *et al.* as disclosing the above indicated limitation. Rather, it is clear that Reddy *et al.*'s "switching between two communication modes" is based on QoS criteria and not based on negotiation. Further, in claim 1, both communication interfaces (one for direct communication and another for indirect communication through a network) are used for communication between a wireless device and another device (i.e., the two communication interfaces provide an alternative route between them). By contrast, Reddy *et al.*'s "two communication modes" are used for communication between one WTRU and two different entities (i.e., (1) a network base station and (2) one of other WTRUs). Thus, Reddy *et al.* provides communication between: (1) a WTRU and a base station; and (2) a WTRU and another WTRU.

Based on the above discussions, it cannot be maintained that Reddy *et al.* discloses a negotiation service selects one of: (1) a first communication interface for direct communication between a wireless device and another device, and (2) a second communication interface for indirect communication through a network. Further, claims 19, 29 and 33 recite similar limitations as recited in limitation (g) of claim 1. Claims 2, 4-5, 7-8, 10-15 and 17-18 depend from claim 1; claims 20, 22-28 depend from claim 19; claims 30-32 depend from claim 29; and claims 34-38 depend from claim 33.

- III. Bahl *et al.* fails to disclose a first connection opened using a negotiation service and a wireless interface is kept open while a second connection opened using a communication service and one of a first communication interface and a second communication interface is open so that said first connection is used to adjust the operation of said second connection.

Regarding limitation (j) of claim 1, it recites that a first connection opened using the negotiation service and the wireless interface is kept open while a second connection opened using the communication service and one of the first communication interface and the second communication interface is open so that the first connection is used to adjust the operation of the second connection. This limitation (*i.e.*, limitation (j)) is disclosed in at least Paragraphs [0024]-[0025] of the present publication as follows:

[0024] Once the communication connection has been established, the two devices proceed to communicate across the open communication connection, block 325. The communication across the communication connection proceeds according to the operation of the selected interface and agreed upon communication. If the negotiation connection is still open, the two devices can also exchange information across the negotiation connection while the communication connection is open. For example, the two devices can use the negotiation connection to adjust the operation of the communication connection.

[0025] When the two devices have completed the communication, the first device closes the communication connection, block 330. The two devices can agree across the communication connection that communication has completed or according to conditions agreed upon during negotiation. In one implementation, the two devices keep the negotiation connection open during communication across the communication connection and use information on the negotiation connection to determine when to close the communication connection.

The Office Action indicates that this limitation is disclosed in Bahl *et al.*, Paragraphs [0014] and [0048]-[0049], which are recited as follows (emphasis added):

[0014] In an embodiment of the present invention where a wireless protocol different than that utilized in the establishment of the



control channel is used for the wireless data session, the system of the present invention idles the communications circuitry associated with that control channel protocol to conserve energy in the wireless device. The system then periodically activates this circuitry to allow for the passing of any additional control messages on this control channel. The period between activation cycles may be varied based on a number of factors including signal fidelity of the wireless protocol utilized in the data session.

[0048] As illustrated in FIG. 6, a control message includes a control command 324 section and a section for the capabilities/preferences parameters 326.

[0049] In an embodiment of the present invention that utilizes a commonly supported wireless protocol to establish the control channel, for example, the 802.11b or Wi-Fi protocol, there is no need to maintain power to the radio transmitter for that protocol once a data session has been established utilizing another wireless protocol. However, since this protocol is utilized as the control channel, control messages between the wireless clients cannot be passed unless and until the circuitry that supports this control channel protocol is powered. As such, FIG. 7 illustrates that periodic activation periods 324 are utilized during which the required circuitry for the control channel is re-powered and any required control messages are passed. As identified in the above-incorporated application, the idle periods 326 during which this circuitry is not powered may be varied based upon the fidelity of the data channel signal, etc. In this way, additional power resources are saved as the idle period 326 is lengthened when the data session is established with a strong signal. This idle period 326 may also be shortened if the established wireless data session is not particularly that strong so that changes to a different wireless protocol or other required control messages may be passed at a greater frequency.

However, appellants respectfully disagree with the Examiner's representation of Bahl *et al.* as disclosing the above indicated limitations. Even assuming *arguendo* that Bahl *et al.*'s use of dual wireless protocols saves power resources, it would be in contrast to limitation (j) of claim 1 wherein the first connection opened using the negotiation service and the wireless interface is kept open while a second connection opened using the communication service and one of the first communication interface

and the second communication interface is open so that the first connection is used to adjust the operation of the second connection.

Based on the above discussions, it cannot be maintained that Bahl *et al.* discloses a first connection opened using a negotiation service and a wireless interface is kept open while a second connection opened using a communication service and one of a first communication interface and a second communication interface is open so that said first connection is used to adjust the operation of said second connection.

Further, claims 19, 29 and 33 recite similar limitations as recited in limitation (g) of claim 1. Claims 2, 4-5, 7-8, 10-15 and 17-18 depend from claim 1; claims 20, 22-28 depend from claim 19; claims 30-32 depend from claim 29; and claims 34-38 depend from claim 33.

In summary, based on the above discussions in Subsections I through III of this section (Section A), the outstanding rejections are improper in asserting that claims 1-2, 4-6, 10-11, 16, 19-20, 22, 24, 29-31 and 33 are unpatentable over Kotzin and Bahl *et al.*, in further view of Reddy *et al.* under 35 U.S.C. §103(a) because the cited references do not suggest the claimed invention either explicitly or impliedly, or the examiner did not present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the cited references. Accordingly, the Board should reject these improper assertions as explained above.

**B. Claim 7 is patentable over Kotzin and Bahl *et al.* in view of Reddy *et al.* as applied to claims 1 and 3 above, and in further view of Janik under 35 U.S.C. §103(a)**

In the final office action dated June 13, 2008, claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.* as applied to claims 1 and 3 above, and in further view of Janik. As explained in the Manual of Patent Examination Procedure §706.02, entitled Rejection on Prior Art, for

obviousness under 35 U.S.C. §103, “to support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” As set forth in detail below, the outstanding rejections are improper because the cited references do not suggest the claimed invention either explicitly or impliedly, or the examiner did not present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the cited references.

I. Janik fails to overcome the deficiencies noted with respect to the combination of Kotzin, Bahl *et al.* and Reddy *et al.*

Regarding claim 7, it recites that “said appropriate communication interface provides a higher data rate than said wireless interface.” This limitation is disclosed at least in Paragraph [0030] of the present publication as follows:

[0030] The devices select a compatible interface using one more communication criteria, block 415. In one implementation, the devices use a proposal and counter proposal negotiation. The first device selects one of the compatible interfaces using communication criteria and sends a proposal to the second device. Using its own communication criteria, the second device agrees to the proposed interface or provides a counter proposal to the first device. This negotiation continues until the two devices agree upon a compatible interface or agree to end the communication. The devices may agree to use the open negotiation connection and that interface as a communication connection. Examples of communication criteria include, but are not limited to: signal strength, speed, bandwidth, data rate, power consumption, power availability, data size requirements, quality of service requirements, cost, user preferences, device manufacturer preferences, service provider preferences, licensing conditions, and advertising agreements.

Based on the foregoing discussion regarding independent claim 1, and since claim 7 depends from claim 1, claim 7 should be allowable over Kotzin, Bahl *et al.*, and

Reddy *et al.* Janik is merely cited for teaching that “a LAN provides a higher data rate than a WAN,” but does not overcome the deficiencies noted with respect to claim 1. Paragraph [0017] of Janik. Therefore, claim 7 should be allowable over Kotzin, Bahl *et al.*, Reddy *et al.*, and Janik.

In summary, based on the above discussions in Subsections I through III of Section A and Subsection I of this section (Section B), the outstanding rejections are improper in asserting that claim 7 is unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.* as applied to claims 1 and 3 above, and in further view of Janik under 35 U.S.C. §103(a) because the cited references do not suggest the claimed invention either explicitly or impliedly, or the examiner did not present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the cited references. Accordingly, the Board should reject these improper assertions as explained above.

**C. Claim 8 is patentable over Kotzin and Bahl *et al.* in view of Reddy *et al.* as applied to claims 1 and 3 above, and in further view of Moon *et al.* under 35 U.S.C. §103(a)**

In the final office action dated June 13, 2008, claim 8 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.* as applied to claims 1 and 3 above, and in further view of Moon *et al.* As explained in the Manual of Patent Examination Procedure §706.02, entitled Rejection on Prior Art, for obviousness under 35 U.S.C. §103, “to support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” As set forth in detail below, the outstanding rejections are improper because the cited references do not suggest the claimed invention either explicitly or impliedly, or the examiner did not present a con-

vincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the cited references.

Claim 8 depends from claim 1. Based on the above discussions in Subsections I through III of Section A, the outstanding rejections are improper in asserting that claim 8 is unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.* as applied to claims 1 and 3 above, and in further view of Moon *et al.* under 35 U.S.C. §103(a) because the cited references do not suggest the claimed invention either explicitly or impliedly, or the examiner did not present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the cited references. Accordingly, the Board should reject these improper assertions as explained above.

**D. Claims 12, 14-15, 17-18, 25, 27-28, 32 and 34-38 are patentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, and in further view of Shah *et al.* under 35 U.S.C. §103(a)**

In the final office action dated June 13, 2008, claims 12, 14-15, 17-18, 25, 27-28, 32 and 34-38 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, and in further view of Shah *et al.* As explained in the Manual of Patent Examination Procedure §706.02, entitled Rejection on Prior Art, for obviousness under 35 U.S.C. §103, “to support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” As set forth in detail below, the outstanding rejections are improper because the cited references do not suggest the claimed invention either explicitly or impliedly, or the examiner did not present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the cited references.

- I. Shah et al. fails to disclose that a beacon source broadcasts a beacon signal using a short-range wireless interface, such that the wireless interface configured as short range and low-power interface can receive the beacon signal to be used in a negotiation service.

Regarding claim 17, it recites further limitations that: the wireless interface supports receiving a beacon signal from a beacon source, and the negotiation service uses the beacon signal to open communication. This limitation is disclosed in at least Paragraphs [0020], and [0032]-[0036] of the present publication as follows:

[0020] The first device finds the second device using a default interface, block 305. One of the wireless interfaces of the first device is a default interface. The first device uses the default interface for initially searching for and establishing connections with other devices for interface negotiation. In one implementation, the default interface is a low-power or inexpensive interface, such as Bluetooth. If the first device does not find the second device, the first device continues to search for the second device by periodically polling the area using the default interface. In one implementation, if the first device does not find the second device (or any other device) using the default interface, the first device searches for the second device using each of the remaining interfaces until another device is found. In this case, while no other device is found the first device continues to cycle through the available interfaces. In one implementation, the first device searches for a particular device using a particular interface according to a request input by a user of the wireless device. In another implementation, the first device periodically polls the local area using the default interface for available and compatible devices. For example, a device periodically sends out a beacon signal using a Bluetooth interface to find nearby and available Bluetooth-compatible devices and maintains a list of available devices.

[0032] In one implementation, the interface negotiation is prompted through a signal received by a wireless device. The signal provides information for establishing a connection for further communication. For example, a beacon source regularly broadcasts a beacon signal compatible with the default interface of a wireless device, so that when a wireless device comes within range of the beacon source the wireless device can receive the

beacon signal and proceed with communication.

[0033] FIG. 5 shows a flowchart 500 of one implementation of using a beacon signal for interface negotiation. Initially, a beacon source is positioned in a fixed location and has a wireless beacon interface. A wireless device having a wireless interface compatible with the beacon interface is within range of the beacon source. The compatible interface of the wireless device is the default interface of the wireless device.

[0034] The beacon source broadcasts a beacon signal using the wireless beacon interface, block 505. In one implementation, the beacon source uses a short-range wireless interface for broadcasting the beacon signal, such as Bluetooth. The beacon signal includes information indicating a resource and connection information for accessing that resource. The connection information indicates a target device, a target interface, and details on how to set up a connection (e.g., an SSID or URL) to the target device through the target interface. The target device can be different from the beacon source. The beacon signal can also include information for multiple resources or connections. For example, one beacon signal indicates that a particular data file can be accessed through a URL and that a Wi-Fi connection is available in the current physical location as well.

[0035] The wireless device receives the beacon signal using the default interface of the wireless device, block 510. The wireless device determines the target device and the interface from the beacon signal, block 515. The wireless device presents information from the beacon signal to a user and whether the target interface is currently available. The user can select to open a connection according to the beacon signal. If the user requests to open a connection to the target device, the wireless device establishes a connection to the target device through the target interface, block 520. The wireless device uses the information from the beacon signal to establish the connection to the target device. In one implementation, the connection opened to the target device is a negotiation connection for further interface negotiation as described above.

[0036] In an alternative implementation, the beacon signal is supplied upon request or is accessed by the wireless device. For example, when a compatible wireless device enters the range of a beacon source, the device informs the beacon source of the

device's presence and the beacon source sends the beacon signal to the wireless device. In another example, the beacon signal is provided as information readable through an infrared interface and a compatible device can read the beacon information as needed.

Regarding claim 34, it recites a further limitation to claim 17 that the beacon source broadcasts the beacon signal using a short-range wireless interface, such that the wireless interface configured as short range and low-power interface can receive the beacon signal to be used in the negotiation service. This limitation is disclosed in at least Paragraph [0034] of the present publication, which is recited here:

[0034] The beacon source broadcasts a beacon signal using the wireless beacon interface, block 505. In one implementation, the beacon source uses a short-range wireless interface for broadcasting the beacon signal, such as Bluetooth. The beacon signal includes information indicating a resource and connection information for accessing that resource. The connection information indicates a target device, a target interface, and details on how to set up a connection (e.g., an SSID or URL) to the target device through the target interface. The target device can be different from the beacon source. The beacon signal can also include information for multiple resources or connections. For example, one beacon signal indicates that a particular data file can be accessed through a URL and that a Wi-Fi connection is available in the current physical location as well.

The Office Action indicates that this limitation is disclosed in Shah *et al.*, Paragraph [0015], which is recited as follows:

[0015] In an IEEE 802-based system, once more than one station is part of an ad hoc network, all of the stations share the burden of sending beacon frames by a random distribution of that task to each station. Algorithms such as the spokesman election algorithm have been designed to “elect” one device as a master station, *i.e.*, a pseudo base station, of the ad hoc network with all other stations being slaves.

However, appellants respectfully disagree with the Examiner's representation of Shah *et al.* as disclosing the above indicated limitations. Although Shah *et al.* mentions that the burden of transmitting beacon frames are shared among base stations,



appellants respectfully disagree with the Examiner that Shah *et al.*'s transmission of beacon frames teaches the limitation of claim 34 that the beacon source broadcasts the beacon signal using a short-range wireless interface, such that the wireless interface configured as short range and low-power interface can receive the beacon signal to be used in the negotiation service.

Based on the above discussions, it cannot be maintained that Shah *et al.* discloses a beacon source broadcasts a beacon signal using a short-range wireless interface, such that the wireless interface configured as short range and low-power interface can receive the beacon signal to be used in a negotiation service.

II. Shah *et al.* fails to disclose that a beacon signal includes information indicating a resource and connection information for accessing that resource.

Regarding claim 35, it recites a further limitation to claim 34 that the beacon signal includes information indicating a resource and connection information for accessing that resource. This limitation is disclosed at least in Paragraph [0034] of the present publication, which is recited here:

[0034] The beacon source broadcasts a beacon signal using the wireless beacon interface, block 505. In one implementation, the beacon source uses a short-range wireless interface for broadcasting the beacon signal, such as Bluetooth. The beacon signal includes information indicating a resource and connection information for accessing that resource. The connection information indicates a target device, a target interface, and details on how to set up a connection (e.g., an SSID or URL) to the target device through the target interface. The target device can be different from the beacon source. The beacon signal can also include information for multiple resources or connections. For example, one beacon signal indicates that a particular data file can be accessed through a URL and that a Wi-Fi connection is available in the current physical location as well.

The Office Action indicates that this limitation is disclosed in Shah *et al.*, Paragraph [0015], which is recited as follows:

[0015] In an IEEE 802-based system, once more than one station is part of an ad hoc network, all of the stations share the burden of sending beacon frames by a random distribution of that task to each station. Algorithms such as the spokesman election algorithm have been designed to “elect” one device as a master station, *i.e.*, a pseudo base station, of the ad hoc network with all other stations being slaves.

However, appellants respectfully disagree with the Examiner’s representation of Shah *et al.* as disclosing the above indicated limitations. Although Shah *et al.* mentions that the burden of transmitting beacon frames are shared among base stations, appellants respectfully disagree with the Examiner that Shah *et al.*’s transmission of beacon frames teaches the limitation of claim 35 that the beacon signal (which is to be used in the negotiation service) includes information indicating a resource and connection information for accessing that resource. Further, other paragraphs of Shah *et al.* mention beacon signal. However, none indicate that beacon signal is used to provide information indicating a resource and connection information accessing that resource.

Based on the above discussions, it cannot be maintained that Shah *et al.* discloses a beacon signal includes information indicating a resource and connection information for accessing that resource.

III. Shah *et al.* fails to disclose that a beacon signal is supplied upon request such that when a wireless device enters the range of a beacon source, the device informs the beacon source of the device’s presence and the beacon source sends the beacon signal to the wireless device.

Regarding claim 38, it recites a further limitation to claim 17 that the beacon signal is supplied upon request such that when the wireless device enters the range of the beacon source, the device informs the beacon source of the device’s presence and the beacon source sends the beacon signal to the wireless device. This limitation is disclosed in Paragraph [0036] of the present publication, which is recited as follows:

[0036] In an alternative implementation, the beacon signal is supplied upon request or is accessed by the wireless device. For example, when a compatible wireless device enters the range of a beacon source, the device informs the beacon source of the device's presence and the beacon source sends the beacon signal to the wireless device. In another example, the beacon signal is provided as information readable through an infrared interface and a compatible device can read the beacon information as needed.

The Office Action indicates that this limitation is disclosed in Shah *et al.*, Paragraph [0015], which is recited as follows:

[0015] In an IEEE 802-based system, once more than one station is part of an ad hoc network, all of the stations share the burden of sending beacon frames by a random distribution of that task to each station. Algorithms such as the spokesman election algorithm have been designed to "elect" one device as a master station, i.e., a pseudo base station, of the ad hoc network with all other stations being slaves.

However, appellants respectfully disagree with the Examiner's representation of Shah *et al.* as disclosing the above indicated limitations. Again, although Shah *et al.* mentions that the burden of transmitting beacon frames are shared among base stations, appellants respectfully disagree with the Examiner that Shah *et al.*'s transmission of beacon frames teaches the limitation of claim 38 that the beacon signal (which is to be used in the negotiation service) is supplied upon request such that when the wireless device enters the range of the beacon source, the device informs the beacon source of the device's presence and the beacon source sends the beacon signal to the wireless device. Further, other paragraphs of Shah *et al.* mention beacon signal. However, none indicate that the beacon signal is supplied upon request such that when the wireless device enters the range of the beacon source, the device informs the beacon source of the device's presence and the beacon source sends the beacon signal to the wireless device.

Based on the above discussion, it cannot be maintained that Shah *et al.* discloses that a beacon signal is supplied upon request such that when a wireless device enters the

range of the beacon source, the device informs the beacon source of the device's presence and the beacon source sends the beacon signal to the wireless device.

In summary, based on the above discussions in Subsections I through III of Section A and Subsection I through III of this section (Section D), the outstanding rejections are improper in asserting that claims 12, 14-15, 17-18, 25, 27-28, 32 and 34-38 are unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, and in further view of Shah *et al.* *et al.* under 35 U.S.C. §103(a) because the cited references do not suggest the claimed invention either explicitly or impliedly, or the examiner did not present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the cited references. Accordingly, the Board should reject these improper assertions as explained above.

**E. Claim 23 is patentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, and further in view of Carlton *et al.* and in further view of Moon *et al.* under 35 U.S.C. §103(a)**

In the final office action dated June 13, 2008, claims 23 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, and further in view of Carlton *et al.* and in further view of Moon *et al.* As explained in the Manual of Patent Examination Procedure §706.02, entitled Rejection on Prior Art, for obviousness under 35 U.S.C. §103, “to support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” As set forth in detail below, the outstanding rejections are improper because the cited references do not suggest the claimed invention either explicitly or impliedly, or the examiner did not present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the cited references.

Based on the foregoing discussion regarding independent claim 19, and since claim 23 depends from claim 19, claim 23 should be allowable over Kotzin, Bahl *et al.*, Reddy *et al.* and Moon *et al.* Carlton *et al.* is merely cited for teaching “communication criteria that includes data rate,” but does not overcome the deficiencies noted with respect to claim 19. Paragraph [0027] of Carlton *et al.* Therefore, claim 23 should be allowable over Kotzin, Bahl *et al.*, Reddy *et al.*, Moon *et al.* and Carlton *et al.*

In summary, based on the above discussion in Sections A the outstanding rejections are improper in asserting that claim 23 is unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, and further in view of Carlton *et al.* and in further view of Moon *et al.* under 35 U.S.C. §103(a) because the cited references do not suggest the claimed invention either explicitly or impliedly, or the examiner did not present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the cited references. Accordingly, the Board should reject these improper assertions as explained above.

**F. Claim 26 is patentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, as applied to claims 19, 22 and 24 above, and further in view of Ahonen *et al.* under 35 U.S.C. §103(a)**

In the final office action dated June 13, 2008, claim 26 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, as applied to claims 19, 22 and 24 above, and further in view of Ahonen *et al.* As explained in the Manual of Patent Examination Procedure §706.02, entitled Rejection on Prior Art, for obviousness under 35 U.S.C. §103, “to support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” As set forth in detail below, the outstanding rejections are improper because the cited references do not suggest the claimed invention either explicitly or impliedly, or the examiner did not present a con-

vincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the cited references.

Based on the foregoing discussion regarding independent claim 19, and since claim 26 depends from claim 19, claim 26 should be allowable over Kotzin, Bahl *et al.* and Reddy *et al.* Ahonen *et al.* is merely cited for teaching that “the communication mode indicates a type of encryption to use for the communication connection,” but does not overcome the deficiencies noted with respect to claim 19. Paragraphs [0001]-[0008] and [0028]-[0030] of Ahonen *et al.* Therefore, claim 23 should be allowable over Kotzin, Bahl *et al.*, Reddy *et al.*, and Ahonen *et al.*

In summary, based on the above discussions in Section A, the outstanding rejections are improper in asserting that claim 26 is unpatentable over Kotzin and Bahl *et al.* in view of Reddy *et al.*, as applied to claims 19, 22 and 24 above, and further in view of Ahonen *et al.* under 35 U.S.C. §103(a) because the cited references do not suggest the claimed invention either explicitly or impliedly, or the examiner did not present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the cited references. Accordingly, the Board should reject these improper assertions as explained above.

**CONCLUSION**

In view of the foregoing, Appellants respectfully submit that the claimed invention is patentable over the references of record. The Examiner has failed to identify or provide teachings in the references for each of the claim limitations. Appellants respectfully request reversal of the Examiner's rejections.

Respectfully submitted,

Dated: January 20, 2009

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**(viii) Claims Appendix**

1. A wireless device, comprising:

a wireless interface configured to provide short range and low power interface for supporting communication across a wireless connection used for a negotiation service to select a communication interface,

wherein the short range and low power interface provides reliable signal and reduced power consumption for negotiation;

a first communication interface for providing a medium range wireless interface;

a second communication interface for providing a wired interface; and

a controller connected to said wireless interface, said controller supporting the negotiation service and a communication service;

wherein said negotiation service provides interface negotiation for using said wireless interface to negotiate with another device to select an appropriate communication interface for communication of data with said another device, and to investigate information and capabilities of said another device,

wherein said negotiation service selects one of: (1) said first communication interface for direct communication between the wireless device and said another device, and (2) said second communication interface for indirect communication through a network,

wherein said first communication interface is a separate interface from said wireless interface used for interface negotiation,

wherein said communication service provides control and management of communication with said another device across a connection established using said negotiation service, and

wherein a first connection opened using said negotiation service and said wireless interface is kept open while a second connection opened using said communication service and one of said first communication interface and said second



communication interface is open so that said first connection is used to adjust the operation of said second connection.

2. The wireless device of claim 1, wherein:  
said wireless interface supports Bluetooth.

3. (Canceled)

4. The wireless device of claim 1, wherein:  
said first communication interface supports Wi-Fi.

5. The wireless device of claim 1, wherein:  
each of said wireless interface and said appropriate communication interface support respective types of wireless communication.

6. (Canceled)

7. The wireless device of claim 1, wherein:  
said appropriate communication interface provides a higher data rate than said wireless interface.

8. The wireless device of claim 1, wherein:  
said appropriate communication interface uses more power than said wireless interface.

9. (Canceled)

10. The wireless device of claim 1, wherein:  
said negotiation service provides interface negotiation automatically.

11. The wireless device of claim 10, wherein:

said negotiation service provides interface negotiation in response to a request by a user.

12. The wireless device of claim 10, wherein:

said negotiation service selects said appropriate communication interface without user input.

13. The wireless device of claim 10, wherein:

said negotiation service selects said appropriate communication interface using settings previously provided by a user.

14. The wireless device of claim 1, wherein:

said wireless interface supports a direct connection to said another device.

15. The wireless device of claim 14, wherein:

said direct connection is a newly established ad hoc network established with said another device.

16. (Canceled)

17. The wireless device of claim 1, wherein:

said wireless interface supports receiving a beacon signal from a beacon source, and

said negotiation service uses said beacon signal to open communication.

18. The wireless device of claim 17, wherein:

said beacon signal indicates said another device as a target device and a target interface, and

said another device is different from said beacon source.

19. A method of interface negotiation, comprising:

configuring a default wireless interface as short range and low-power interface;

searching for a second device using the default wireless interface of a first device;

establishing a negotiation connection between said first device and said second device using said default wireless interface,

wherein the short range and low power interface provides reliable signal and reduced power consumption for the negotiation connection;

negotiating to select an appropriate communication interface for communicating data between said first device and said second device using said negotiation connection, and to investigate information and capabilities of said second device,

wherein selecting an appropriate communication interface includes selecting one of:

(1) a first communication interface for direct connection between the first device and the second device, and (2) a second communication interface for indirect connection through a network,

wherein said communication interface is a separate interface from said default wireless interface used for providing negotiation connection;

establishing a communication connection using said selected communication interface;

communicating data between said first device and said second device using said communication connection,

wherein said negotiation connection is open while said communication connection is open so that said negotiation connection is used to adjust the operation of said communication connection, and information on said negotiation connection is used to determine when to close the communication connection; and

closing said communication connection when the determination is made.

20. The method of claim 19, further comprising:

searching for said second device using a secondary interface.

21. (Canceled)

22. The method of claim 19, wherein negotiating to select an appropriate communication interface includes:

determining one or more available interfaces;

determining one or more compatible interfaces from among said one or more available interfaces; and

selecting one of said one or more compatible interfaces as said communication interface using one or more communication criteria.

23. The method of claim 22, wherein:

said communication criteria include data rate and power use.

24. The method of claim 22, wherein negotiating to select an appropriate communication interface also includes:

selecting a communication mode.

25. The method of claim 24, wherein:

said communication mode indicates whether to use a direct connection between said first device and said second device or an indirect connection between said first device and said second device for said communication connection.

26. The method of claim 24, wherein:

said communication mode indicates a type of encryption to use for said communication connection.

27. The method of claim 19, further comprising:

receiving a beacon signal from a beacon source at said first device; and

determining a target device and a target interface using said beacon signal;

wherein said target device is said second device and said target interface is said default interface.

28. The method of claim 27, wherein:

said target device is different from said beacon source.

29. A system for interface negotiation, comprising:

means for configuring a default wireless interface as short range and low-power interface;

means for searching for a second device using the default wireless interface of a first device;

means for establishing a negotiation connection between said first device and said second device using said default wireless interface,

wherein the short range and low power interface provides reliable signal and reduced power consumption for the negotiation connection;

means for negotiating to select an appropriate communication interface for communicating data between said first device and said second device using said negotiation connection, and to investigate information and capabilities of said second device,

wherein selecting an appropriate communication interface includes selecting one of:

(1) a first communication interface for direct connection between the first device and the second device, and (2) a second communication interface for indirect connection through a network,

wherein said communication interface is a separate interface from said default wireless interface used for providing negotiation connection;

means for establishing a communication connection using said selected communication interface;

means for communicating data between said first device and said second device using said communication connection,

wherein said negotiation connection is open while said communication connection is open so that said negotiation connection is used to adjust the operation of said communication connection, and information on said negotiation connection is used to determine when to close said communication connection; and

means for closing said communication connection when the determination is made.

30. The system of claim 29, further comprising:

means for determining one or more available interfaces;

means for determining one or more compatible interfaces from among said one or more available interfaces; and

means for selecting one of said one or more compatible interfaces as said communication interface using one or more communication criteria.

31. The system of claim 30, further comprising:

means for selecting a communication mode.

32. The system of claim 29, further comprising:

means for receiving a beacon signal from a beacon source at said first device;  
and

means for determining a target device and a target interface using said beacon signal;

wherein said target device is said second device and said target interface is said default interface.

33. A computer-readable storage medium including a computer program for use in interface negotiation, the program comprising executable instructions that cause a computer to:

configure a default wireless interface as short range and low-power interface;

search for a second device using the default wireless interface of a first device;

establish a negotiation connection between said first device and said second device using said default wireless interface,

wherein the short range and low power interface provides reliable signal and reduced power consumption for the negotiation connection;

negotiate to select an appropriate communication interface for communicating data between said first device and said second device using said negotiation connection, and to investigate information and capabilities of said second device,

wherein selecting an appropriate communication interface includes selecting one of:

(1) a first communication interface for direct connection between the first device and the second device, and (2) a second communication interface for indirect connection through a network,

wherein said communication interface is a separate interface from said default wireless interface used for providing negotiation connection;

establish a communication connection using said selected communication interface;

communicate data between said first device and said second device using said communication connection,

wherein said negotiation connection is open while said communication connection is open so that said negotiation connection is used to adjust the operation of said communication connection, and information on said negotiation connection is used to determine when to close said communication connection; and

close said communication connection when the determination is made.

34. The wireless device of claim 17, wherein the beacon source broadcasts the beacon signal using a short-range wireless interface, such that said wireless interface configured as short range and low-power interface can receive the beacon signal to be used in said negotiation service.

35. The wireless device of claim 34, wherein the beacon signal includes information indicating a resource and connection information for accessing that resource.

36. The wireless device of claim 35, wherein the connection information includes information that indicates a target device, a target interface, and details on how to set up a connection to the target device through the target interface.

37. The wireless device of claim 34, wherein the beacon signal includes information for multiple resources or connections to indicate that a particular data file can be accessed through a connection.

38. The wireless device of claim 17, wherein the beacon signal is supplied upon request such that when the wireless device enters the range of the beacon source, the device informs the beacon source of the device's presence and the beacon source sends the beacon signal to the wireless device.



(ix) **Evidence Appendix**

None.

(x) **Related Proceedings Appendix**

None.